MONTHLY WEATHER REVIEW.

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INTRODUCTION.

The general weather conditions which prevailed over the United States and Canada during August, 1883, are presented in this REVIEW, based upon reports received from the regular stations of the Signal Service, from the Canadian Meteorological Service, and from co-operating state weather services, and voluntary observers.

The more prominent meteorological features of the month have been:

1st.—The low mean temperatures which have prevailed over nearly the whole country, being most marked in the Missouri and upper Mississippi valleys.

2d.—The small monthly precipitation, which has been below the average in all parts of the country, except in the extreme northwest and in the northern and middle slopes; the districts of greatest deficiency being the Gulf States, Ohio and upper Mississippi valleys, and the upper lake region.

The most violent and destructive local storms of the month occurred in Iowa, during the night of the 7–8th, and in Minnesota, on the 21st, the latter causing the destruction of a large part of the town of Rochester, Minnesota, and the loss of about thirty lives.

Respecting the weather over the north Atlantic ocean, the month has been marked by a succession of storms, two of which (numbers vi. and viii. on chart ii.) were apparently tropical hurricanes. These were disastrous in their effects, especially near the banks of Newfoundland and along the coast of the United States. Many lives were lost and great damage done to shipping. The approximate paths of the centres of these storms are shown on chart ii.

Referring to the ice region of the north Atlantic, the diminution of reports indicate that icebergs are rapidly disappearing.

Under "notes and extracts" will be found an interesting report upon the climate of Palestine, by Mr. Selah Merrill, United States consul at Jerusalem.

In the preparation of this REVIEW, the following data, received up to September 20th, have been used, viz.: the regular tri-daily weather-charts, containing data of simultaneous observations taken at one hundred and twenty-two Signal-Service stations and fifteen Canadian stations, as telegraphed to this office; one hundred and fifty-one monthly journals, and one hundred and thirty-five monthly means from the former, and fifteen monthly means from the latter; two hundred and thirty-eight monthly registers from voluntary observers; fifty-seven monthly registers from United States Army post surgeons; marine records; international simultaneous observations; marine reports, through the co-operation of the "New York Herald Weather Service;" abstracts of ships' logs, furnished by the publishers of "The New York Maritime Register;" monthly weather reports from the local weather services of Indiana, Iowa, New Jersey, Ohio, and Tennessee, and of the Central Pacific railway company; trustworthy newspaper extracts; and special reports.

ATMOSPHERIC PRESSURE.

[*Expressed in inches and hundredths.*]

The distribution of mean atmospheric pressure for the month of August, 1883, determined from the tri-daily telegraphic observations of the Signal Service, is shown by the isobarometric lines on chart iii. This chart exhibits three areas of barometric maxima, two of which are situated east of the Rocky mountains and are inclosed by the isobars of 30.05, and the third area occupies the north Pacific coast, where, at Portland, Oregon, the mean atmospheric pressure for the month was 30.1. Of the areas of barometric maxima east of the Rocky mountains, the larger extends from northern Ohio and Pennsylvania southward to central Georgia, and the smaller area covers Illinois and the lower Missouri valley. The highest barometric means reported from stations east of the Rocky mountains are: 30.07 at Cincinnati, Ohio; Knoxville, Tennessee; Saint Louis, Missouri, and Washington, District of Columbia; and 30.09 at Cairo, Illinois. An area of barometric minima covers the southern and central plateau regions as shown by the broken isobars of 29.85 and 29.9. Owing to the limited number of reports received from these districts, the isobars are broken to indicate doubt, but the reports at hand show the region of least pressure to cover Arizona, where monthly means of 29.81 and 29.84 occurred at Yuma and Fort Apache, respectively.

Compared with the mean pressure for July, there has been an increase in all districts except in Tennessee and the south Atlantic and Gulf States. In the Canadian maritime provinces, the Rocky mountain region, and on the Pacific coast, the excess varies from .01 to .05; it is greatest in the upper lake region, where it amounts to .10. The line of no change extends from the central part of southern Texas northeastward to the Atlantic coast near the southern boundary of Virginia. The deficiencies in the south Atlantic and Gulf states and in Tennessee vary from .01 to .07, and are greatest along the immediate Gulf coast and in Florida.

DEPARTURES FROM THE NORMAL VALUES FOR THE MONTH.

In New England and southward along the Atlantic coast to Georgia, the mean pressure has been slightly below the normal, the deficiencies varying from .01 to .03. From these districts westward to the Pacific coast, the mean pressure has been above the normal, except over the northern part of the upper lake region, where it has not differed from the normal. The increase over the normal has not exceeded .08, and has been greatest in the upper Mississippi and Missouri valleys, the northern slope, and north Pacific coast region.

BAROMETRIC RANGES.

The monthly barometric ranges have been greatest in the extreme northwest, and in the upper lake region; they have been smallest in southern California, and at stations on the coast of the Gulf of Mexico. The extremes for the month are: greatest, 1.09 at Saint Vincent, Minnesota; smallest, 0.19 at Los Angeles, California.

The monthly ranges have varied in the different districts as follows:

New England.—From 0.57 on the summit of Mount Washington, New Hampshire, to 0.67 at Portland, Maine.